

MACROCELL proposal^{42/} as well as with the existing operations of the IRIDIUM® system.^{43/}

This technical incompatibility would be cause for Iridium to be concerned; however, Iridium understands that Celsat has recently clarified its proposal by representing on the record in another Commission proceeding that, notwithstanding the breadth of its request, Celsat does not seek access to the portions of the Ka-Band within which the IRIDIUM® system is now authorized to operate its feeder links and which Iridium now requests to use in its MACROCELL application.^{44/} Rather, Celsat has indicated that it is seeking access only to spectrum "in the GSO FSS portion of the Ka-Band."^{45/} Moreover, Celsat has also acknowledged the obligation of "a service provider 'proposing to operate in a band segment in which it does not have licensing priority to operate on an unprotected non-interference basis to the primary service.'"^{46/}

^{42/} As the Commission correctly observes, Iridium has requested feeder link authority 400 MHz of uplink spectrum between 29.1 and 29.5 GHz and 400 MHz of downlink spectrum between 19.3 and 19.7 GHz. See Notice, slip op. at 23 ¶ 50 (table). Iridium's MACROCELL request is consistent with the allocation in the Ka-Band and the feeder link frequencies presently assigned to the existing IRIDIUM® system.

^{43/} On May 21, 1999, pursuant to the Ka-Band Public Notice, Motorola, Inc., the license holder for the IRIDIUM® system, by its wholly-owned subsidiary, Space System License, Inc., filed a Petition to Deny against the Celsat amendment. See Petition to Deny, FCC File No. SAT-AMD-19980123-00009, filed May 21, 1999, by Space System License, Inc.

^{44/} See Consolidated Reply and Opposition to Petitions to Deny or Defer of Celsat America, Inc., FCC File No. SAT-AMD-19980123-00009, filed June 11, 1999, by Celsat America, Inc., at 2.

^{45/} *Id.* at 3.

^{46/} *Id.* at 7 (quoting *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, 12 FCC Rcd 22310, 22326 (1997) (continued...))

The Commission's proposal in the Notice to assign Celsat feeder link spectrum within the segments of the Ka-Band designated for GSO FSS systems^{47/} generally comports with Celsat's recent statements. However, even with that proviso, it does not appear that Celsat's request can be accommodated without encroaching into the segments of the band which are designated for GSO FSS on a secondary basis only.^{48/} To the extent that, consistent with Celsat's request, the Commission does not license Celsat to operate in the 19.3-19.7 GHz and 29.1-29.5 GHz portions of the Ka-Band, Iridium has no objection to Celsat's proposal.

Iridium does oppose, however, the Commission's proposal to defer consideration of the feeder link aspects of Iridium's MACROCELL application to a second Ka-Band processing round.^{49/} While it may be appropriate (indeed, even necessary) to address Celsat's application in such a processing round because it proposes a variance from the Ka-Band plan that raises significant coordination issues relative to incumbent and applicant GSO FSS systems, the Iridium application presents no such difficulties. On the contrary, Iridium's proposal is entirely consistent with the existing Ka-Band plan, and Iridium is only seeking to use spectrum that has already been allocated for NGSO MSS feeder links and, more specifically, much of which has already been licensed for

^{46/} (...continued)
(*Third Report and Order* in CC Docket No. 92-297) ("*Ka-Band Third Report and Order*").

^{47/} See Notice, slip op. at 30 ¶ 64.

^{48/} Indeed, the Notice appears to recognize this fact. See *id.* ("We note that much of Celsat's requested spectrum falls within secondary GSO FSS designations . . .").

^{49/} *Id.* ¶ 63.

use with the IRIDIUM® system. Iridium's MACROCELL application creates no meaningful spectrum coordination issues whatsoever.

If, however, the Commission believes that Iridium's feeder link proposal must be considered in the second Ka-Band processing round, such consideration should be limited to the feeder link spectrum not already in use by the IRIDIUM® system. That spectrum has been coordinated with Motorola. Thus, the MACROCELL system application can be granted with the feeder link frequencies 19.4-19.6 GHz and 29.1-29.25 GHz unconditionally, with the additional frequencies granted conditionally, pending resolution of the second Ka-Band processing round.

As the Commission observes, Globalstar's application proposes to operate feeder uplinks in the 19.3-19.6 GHz band, a segment of the Ka-Band presently allocated for MSS feeder downlinks.^{50/} Although Globalstar's proposed "reverse-band working" ("RBW") approach is not squarely consistent with the Ka-Band plan, the Commission has indicated a willingness to consider such requests on a case-by-case basis.^{51/} To the extent that Globalstar's application, like Iridium's, does not seek feeder link spectrum outside of the portions of the Ka-Band allocated for MSS feeder links, it may also be unnecessary to defer consideration of Globalstar's feeder link application to a later Ka-Band processing round. However, before Globalstar is permitted to operate reverse-band within the NGSO MSS feeder downlink frequencies, it must first be required to coordinate the placement of its earth stations with the location of earth stations supporting the IRIDIUM® system and those to be used in connection with the MACROCELL system.

^{50/} Notice, slip op. at 30 ¶ 65.

^{51/} *Id.*

B. Radionavigation Frequencies

In the Notice, the Commission notes that Boeing proposes to operate a Navigation Augmentation Service in the 1565.42-1585.42 MHz GPS L1 band which is presently allocated for the Radionavigation Satellite Service.^{52/} Further observing that Government satellites, including the global positioning system ("GPS"), operate in these frequencies and that various issues would need to be resolved if additional use of the band is to be authorized, the Commission solicits comment on Boeing's proposal.^{53/}

The Commission correctly acknowledges that Boeing's proposal presents significant technical and national policy questions worthy of careful and deliberate study. Iridium respectfully submits, however, that the instant proceeding does not afford a suitable or appropriate context to devote to these difficult questions the attention that they deserve. In short, they are simply beyond the scope of the Commission's work in this proceeding. The instant proceeding focuses on licensing the next generation of MSS in the U.S. at 2 GHz and, as the Notice reveals, that relatively narrow scope nevertheless presents a score of difficult technical, regulatory, trade, and competition-related matters to be addressed without reaching to embrace issues not directly germane to 2 GHz MSS licensing. While Iridium believes that these issues warrant attention in a separate inquiry, Iridium opposes operations, commercial or otherwise, in the bands assigned to GPS services that would compromise the integrity and accuracy of the GPS system. For these reasons, the Boeing application should be denied. There is no reason to delay further the resolution of this proceeding to address all of the problems inherent in the Boeing application.

^{52/} *Id.*, slip op. at 31 ¶ 68.

^{53/} *Id.*

V. SERVICE RULES

A. **Regulatory Treatment**

Iridium supports the Commission's tentative conclusion to classify as non-common carriage the space segment component of 2 GHz MSS systems and the related gateway and TT&C earth stations used to support those systems.^{54/} The Notice correctly reasons that Sections 332(c)(5) and 3(44) of the Communications Act of 1934, as amended,^{55/} afford the Commission discretion to impose common carrier regulation on satellite services or to forbear from doing so.^{56/}

Many of the proposals in the Notice are predicated on the close similarities that exist between 2 GHz MSS and the existing Big LEO service. The Commission in the Big LEO proceeding specifically declined to impose common carrier regulation upon those licensees,^{57/} and the same reasons that led the Commission to that conclusion apply with equal force here.

Moreover, as the Commission observes, MSS space segment providers do not hold themselves out indifferently to all users.^{58/} Indeed, as suppliers of bulk capacity,

^{54/} *Id.*, slip op. at 33 ¶ 74, 36 ¶ 78.

^{55/} 47 C.F.R. §§ 334(c)(5), 153(44).

^{56/} Notice, slip op. at 33 ¶ 73. See also H.R. Conf. Rep. No. 213, 103^d Cong., 1st Sess. 494 (1993), *reprinted in* 1993 U.S. CODE CONG. & ADMIN. NEWS 1088, 1182 (contrasting the provision of space capacity to commercial providers with the provision of space capacity directly to users of commercial services and clarifying that only the provision of service directly to users falls within Section 332(c)(1)(A) and the requirement of common carrier treatment).

^{57/} *Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, 9 FCC Rcd 5936, 6003-6005 (1994) ("*Big LEO Report and Order*").

^{58/} Notice, slip op. at 34-35 ¶ 76.

such operators do not (and in the case of 2 GHz MSS operators, likely will not) hold themselves out to serve the public. Rather, as Iridium's application indicates, with respect to the MACROCELL system, "Iridium intends instead [to] supply MACROCELL space segment capacity on a wholesale basis to resellers and will tailor its offerings to the individual requirements of these resellers."^{59/} These resellers, in turn, may provide services to end users on a retail basis or re-sell bulk capacity to other service providers, or both.^{60/}

The Commission has recognized that the provision of such wholesale capacity on satellite and cable facilities to service providers (which themselves might be common carriers) is not common carriage.^{61/} Moreover, as the Notice also recognizes, the Commission has historically found it unnecessary to impose common carrier regulations on most satellite systems.^{62/} The services to be provided by 2 GHz MSS operators are indistinguishable in all relevant respects from those which the Commission has held to be non-common carriage. Accordingly, the Commission should adopt the same regulatory treatment 2 GHz MSS operators in this proceeding.

^{59/} Application of Iridium LLC for Authority to Launch and Operate the MACROCELL Mobile Satellite System in the 1990 to 2025 and 2165 to 2200 MHz Mobile Satellite Service Bands, FCC File No. 187-SAT-P/LA-97(96), filed September 26, 1997, at 9 ("Iridium Application").

^{60/} *Id.*

^{61/} See, e.g., *Optel Communications, Inc.*, 8 FCC Rcd 2267, 2268 (1993); *Tel-Optik, Ltd.*, 100 F.C.C.2d at 1046; and *Domestic Fixed-Satellite Transponder Sales*, 90 F.C.C. 2d 1238, 1255-57 (1982).

^{62/} Notice, slip op. at 34-35 ¶¶ 76 & n. 161 (citing, e.g., *First Round NVNG MSS Order*, 8 FCC Rcd at 8457 ¶ 24; *Big LEO Report & Order*, 9 FCC Rcd at 6004 ¶ 179; *Ka-Band Third Report and Order*, 12 FCC Rcd 22310, 22334 ¶ 60).

B. System License and License Term

In large measure, Iridium supports the Commission's proposals relative to system licensing. In Iridium's experience, the Commission's method for issuing authority for the launch and operation of systems comprised of technically identical satellites has worked effectively in the Big LEO service, and it is sensible to continue to use this method for licensing NGSO 2 GHz MSS systems. Iridium also supports the proposal to continue to license GSO satellites on an individual basis.

With respect to license term, Iridium believes that the length of a 2 GHz MSS operator's authorization should be at least ten years.^{63/} Iridium urges the Commission to consider a longer license term that more realistically accommodates the considerable capital outlays that technologically-advanced MSS systems require and recognizes the need for a long-term service to recover that investment, or, at a minimum, to adopt a renewal expectancy. A longer term will serve the public interest by providing greater assurance of continuing service from such systems. This assurance of continued service is also particularly important for global systems, as it provides increased economic stability necessary to encourage the substantial investment required to launch and operate such systems.

As the Notice observes, ten years was the maximum term permitted by the Communications Act at the time the Big LEO systems were licensed.^{64/} As the Commission also acknowledges, that statutory cap is no longer in place, and no apparent reason exists to preserve it. By contrast, a very compelling rationale exists to abandon it in favor of a longer license term.

^{63/} *Id.*, slip op. at 37 ¶ 80.

^{64/} *Id.*

Almost two decades ago, the Commission observed that “in the satellite market, where the risks are high and the financial investments substantial, predictability and stability are desirable if investment and innovation are to be encouraged.”^{65/} These words are especially apt in today’s highly competitive, and increasingly saturated, global market for satellite services. As capital intensive as the first generation of MSS systems has been, the next generation of systems represented by the 2 GHz MSS applicants now before the Commission is likely to place even greater demands on investors’ resources.

The Notice notes that a ten year license term “appears to provide sufficient certainty for licensees to obtain financing while providing an opportunity for Commission review of the license after a system’s first decade of operation.”^{66/} In recognition of the “enormous investment necessary to launch and operate 2 GHz MSS satellite systems,” the Commission proposes to grant liberal extensions to satellites that continue to operate beyond their license term, and to replacements, unless extraordinary circumstances require denial.^{67/}

Rather than adopt a vague review policy, the Commission should adopt a clear renewal expectancy. Stability for both investors in and subscribers to global communications systems depends upon continuity of service. The Commission could make important strides toward improving the competitive viability of all 2 GHz MSS licensees and assuring continuity of service by expressly affording licensees an

^{65/} 1980 Assignment Order, 84 F.C.C.2d 584, 601

^{66/} Notice, slip op. at 37 ¶ 80.

^{67/} *Id.*, slip op. at 38 ¶ 82.

expectancy that their licenses will be renewed at the end of the term absent extraordinary circumstances.

C. Implementation Milestones

The Commission requests comments on a proposed set of implementation milestones for 2 GHz MSS systems.^{68/} The Commission proposes that the milestones would run from the date the Commission grants the service link license (or, in the case of LOI filers, from the date the Commission releases a document authorizing LOI filers to use spectrum to serve the U.S.), without regard to whether the feeder and inter-satellite link spectrum has been assigned. A system could begin construction at its own risk before receiving a service link authorization.

The Commission proposes slightly different milestones for GSO and NGSO systems. Both would have to begin construction of their satellites within one year of authorization, but NGSOs would have to begin constructing two satellites by that date while GSO's would only have to begin constructing one. Both would have to begin constructing all remaining satellites within three years of grant. While NGSOs would have to complete construction and launch the first two satellites within four years of grant; GSOs would have five years to complete and launch at least one satellite into each of its orbital slots. Both GSO and NGSO systems would have to be launched and operational within six years of grant. Failure to meet the required milestones would render the system authorization null and void.

Iridium believes that the start date for milestone implementation of LOI filers should begin at the same time as the start date for licensees. Consistency and fairness

^{68/} *Id.*, slip op. at 39-41 ¶¶ 83-90.

require that all systems' milestones begin to run from the date that they are authorized to use service links in the U.S.

Iridium also agrees that the milestone implementation dates should run from the service link grant date and not the feeder or intersatellite link frequency grant date. Such a rule will encourage applicants to identify spectrum for feeder and intersatellite links that is most likely to be obtainable, and discourage *de facto* extensions of the milestone dates through the selection of feeder link frequencies that will require lengthy proceedings to resolve.

With respect to specific milestones, Iridium agrees with the Commission's proposal to incorporate the Critical Design Review into the milestones. Usually, before a satellite manufacturer will bid on a system, it needs to conduct an engineering analysis to determine if it can build the system. Once that occurs, a contract to construct the system is executed. The next step is to design the system; critical dates in this process are the system Preliminary Design Review (PDR) and Critical Design Review (CDR). After the CDR milestone is successfully achieved, construction of satellites to be used in commercial operation can begin. When the first satellites are complete, launches can begin. Depending upon the number of satellites and the success of the launches, it can take a substantial amount of time to complete the entire constellation.

Iridium believes that an appropriate set of milestones would be the following:

One year from grant: sign contract for construction of the satellite system.

Two and a half years from grant: complete successful CDR.

Five years from grant: launch first satellite(s).

Six years from grant: complete launch of all satellites in full commercial constellation and begin service.^{69/}

This is generally consistent with the Commission's proposal, assuming that signing a contract satisfies the Commission's definition of "beginning construction." However, it includes a milestone for CDR completion and removes the one year differentiation between GSOs and NGSOs regarding launch of first satellites (setting both at five years). A CDR milestone is appropriate to demonstrate that progress is being made between the first and fifth year. Otherwise, it could take four years to recognize that a licensee is not moving to construct in a timely manner.

Iridium does believe the completion date for constructing and launching the first satellite should be five years for GSOs and only four for NGSOs. Both types of systems have to go through the same rigorous design and test phases. An NGSO system usually will be launching multiple satellites on its first launch, so it has to manufacture more satellites than a GSO system to meet this milestone, even if it takes longer to manufacture a single GSO satellite than a non-GSO satellite.

Six years to complete the constellation and launch allows at least a year between the first and last launch deadlines. The first launch could obviously occur earlier. In addition, some flexibility should be allowed in enforcement of the milestones for launch failures or satellite failures beyond the control of the satellite operator.

On the other hand, the 2 GHz MSS milestones should not be used as an extension of the Big LEO milestones. Two of the 2 GHz applicants (Ellipso and

^{69/} The Commission may have to consider later modifying or extending this date, due to the high demand for launch services and the potential limited availability of launch vehicles and launch capacity. This is particularly true if GSO launch quotas remain and if sanctions are placed on non-U.S. launches.

Constellation) propose to modify their Big LEO licenses to add the 2 GHz frequencies. These two applicants should not be given a new six year period to construct their Big LEO systems but should instead be held to their current Big LEO milestones because they are not proposing to build new systems.

D. Reporting Requirements

Iridium supports the Commission's proposal to apply Part 25 reporting requirements to 2 GHz MSS operators similar to those applicable to Big LEO systems.^{70/} However, these need to be improved, for example, to delete the requirement to report on system utilization and to provide for confidential treatment of reports from operational systems but not of reports related to progress in meeting implementation milestones, which should be publicly available. Iridium supports the Commission's proposal to amend Section 25.143(e) to require that reports be filed on October 15th rather than June 30th of each year. As the Notice observes, the later collection date should provide the Commission with more complete, and therefore more reliable, data upon which to base its regulatory fee assessments.

E. E911 and Related Issues

In establishing the Big LEO service, the Commission decided to refrain from requiring caller ID, standardized position information, and automatic routing for distress and safety communications or disaster response communications and deferred further consideration of the issue to a future separate proceeding on E911.^{71/} Later, in its E911 proceeding, the Commission recognized that MSS providers face unique technical,

^{70/} Notice, slip op. at 42 ¶ 91. See also, e.g., 47 C.F.R. §§ 25.210(j) (fixed-satellite service reporting requirements), 25.142(c) (NVNG MSS satellite service reporting requirements), 25.143(e) (Big LEO reporting requirements).

^{71/} *Big LEO Report and Order*, 9 FCC Rcd 5936 at 6012-13.

operational and legal issues with respect to emergency calling and other matters based on system architecture, as well as the international nature of the service and, therefore, declined to mandate emergency calling requirements for MSS.^{72/} Specifically, it concluded:

[W]e recognize that adding specific [emergency calling] regulatory requirements to MSS may impede the development of the service in ways that might reduce its ability to meet public safety needs. For example, coordination with international standards bodies will be necessary for international calls, and the current state of technology requires more obstacles to be overcome in the case of MSS carriers than for terrestrial carriers. . . . [W]e do not adopt schedules or other requirements for them here. The carriers and other interested parties are urged to develop emergency access systems as soon as is feasible to speed eventual implementation of effective emergency access and to minimize the costs of re-engineering facilities.^{73/}

The Commission reiterated and confirmed this conclusion as recently as late 1997:

The commercial MSS industry is still in its infancy. . . . [I]t is our policy . . . not to impose specific regulatory requirements on certain classes of CMRS providers that have not yet fully developed their commercial services. . . . [W]e might revisit our decision if these various services develop into a mobile public telephone service like cellular or broadband PCS.

* * * *

[E]mergency service requirements for global MSS systems should be developed in an international forum to take into account compatibility and consistency with international standards, and to avoid burdening United States MSS licensees with a patchwork of different requirements. . . . We will revisit this issue if the MSS industry develops into a commercial mobile telephone service similar to cellular and

^{72/} *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 11 FCC Rcd 18676 (1996) ("E911 Order").

^{73/} *Id.* at 18718.

broadband PCS, and still does not provide reliable public safety access to MSS customers.^{74/}

These conclusions apply with equal force today. It is still premature to require that MSS terminals have E911 and related capabilities. The MSS industry remains in its infancy. Only one of the new Big LEO systems has been deployed, and only one other system has begun launching satellites. MSS is yet far from developing into a commercial mobile public telephone service like cellular or PCS. No standards have been developed in any international forum.

As the Commission has recognized, the optimal approach to development of specific MSS emergency calling mechanisms would be to encourage the industry to work together and with the international community to establish global emergency calling standards.^{75/} Only after technically achievable mechanisms that address varying international legal issues and restrictions have been developed for emergency calling, could they begin to be fully implemented by MSS operators. Adoption of specific FCC requirements at this early stage in the development of MSS systems would only serve to burden MSS providers unnecessarily and may ultimately not be technically achievable by, or legally appropriate for, all MSS providers.

Therefore, any further consideration of imposition of E911 requirements should take place in the future and in a separate proceeding. This approach has the added benefit of not delaying timely completion of this proceeding or introducing significant uncertainties to the design and implementation of the proposed 2 GHz MSS systems.

^{74/} *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 12 FCC Rcd 22665, 22707, 22708 (emphasis added).

^{75/} The ITU process provides an effective mechanism for developing such standards.

Finally, Iridium cautions that, before considering any additional requirements that would impose significant and expensive burdens on the design and operations of U.S.-licensed MSS systems, the Commission should consider the potential competitive detrimental impact of such decisions relative to non-U.S.-licensed systems that do not face such requirements.

F. Service to Unserved Communities

One novel element of the Commission's proposed service rules for 2 GHz MSS is its inquiry concerning policies or rules that it could implement in order to induce 2 GHz MSS licensees to provide service to unserved, underserved, and rural, insular, or economically isolated areas such as those on Native American reservations, and in Alaska, Hawaii, Puerto Rico, and the U.S. territories and possessions.^{76/} The Commission accurately observes that "[s]atellites may offer a cost advantage over wireline access alternatives in remote areas where a limited population may not provide the economies of scale to support the deployment of wireline or terrestrial wireless networks."^{77/}

Iridium supports the Commission's policy goal to encourage delivery of such cost-effective telecommunications services to persons in such disenfranchised areas. In fact, most if not all of the 2 GHz MSS space system operators licensed in this proceeding will be capable of providing service to remote populations in each of the areas identified by the Commission simply by virtue of their compliance with the Commission's proposed territorial coverage requirements. Indeed, ubiquitous coverage is the principal hallmark that distinguishes satellite service. However, MSS space

^{76/} Notice, slip op. at 44 ¶ 95.

^{77/} *Id.*

system licensees in almost every instance provide only bulk transmission capacity. They do not provide retail services to end users. Rather, such services are customarily provided by terrestrial gateway operators and/or local service providers. Accordingly, any incentives intended to ensure that remote or otherwise underserved populations receive access to the 2 GHz MSS licensees' orbital infrastructure appropriately should be directed to the earth segment operators and not the space segment licensees.^{78/}

Because all 2 GHz MSS space segment licensees will be similarly situated relative to their capability to provide service to unserved and underserved populations, the Commission should not employ this consideration as a criterion for resolving expansion band coordination disputes in the event the Commission adopts the Flexible Band Plan approach. As Commissioner Powell observed, the Commission should not adopt what would be, in effect, a new comparative criterion.

Iridium opposes the proposal that a pledge to serve unserved communities be used as a basis for relieving space segment licensees of their milestone obligations. Indeed, it would be plainly antithetical to the Commission's goal of expediting deployment of telecommunications infrastructure to underserved communities to use a promise of such service as a basis to waive or extend rules intended to ensure that MSS systems are deployed in a timely fashion.

For these reasons, it would be equally inappropriate to impose any such regulatory "carrots" or "sticks" upon Big LEO licensees or other MSS system operators,

^{78/} Indeed, Commissioner Powell made this very point in his comments on the instant proposal when the Commission adopted the Notice, observing that, in proposing to regulate or to create incentives for space segment providers, the Commission had "the wrong horse."

and the Commission should decline to commence a separate proceeding directed toward such an end.^{79/}

G. Trafficking

The Commission also seeks comment on whether to adopt an anti-trafficking rule, similar to Section 25.143(g), that would apply to 2 GHz MSS licensees and whether such rule should also apply to foreign systems seeking U.S. spectrum reservation, *i.e.*, TMI, ICO, and Inmarsat.^{80/} Iridium believes that the anti-trafficking rule should apply to the 2 GHz proceeding, as it now applies to the Big LEO licensees, but only if it can also be applied with equal force and effect to the LOI filers, and Iridium is not sure that is possible. As discussed at the outset of these comments, one of the serious challenges facing the Commission in this proceeding is how to avoid unfairly disadvantaging the U.S. licensees while crafting rules such as this that would appear to apply to U.S. licensees and not to LOI filers.

One restriction that Iridium believes can and should be placed on the authorizations issued to two of the LOI filers is a restriction on the two that are affiliated in ownership and control and that together exercise control over a substantial amount of global MSS spectrum: Inmarsat and ICO. Iridium proposes that the Commission condition any authorization to Inmarsat and ICO so as to prohibit the transfer of the spectrum (by merger, lease, agreement or otherwise) between Inmarsat and its affiliate, ICO, unless the Commission determines first that (1) all global MSS systems not

^{79/} Iridium believes that the foregoing facts strongly argue against employing any "service to unserved areas" criterion as a factor in decision-making concerning 2 GHz MSS space systems; however, should the Commission nevertheless decide to adopt such a rule, it must -- as a matter of competitive fairness -- ensure that the rule is applied equally to U.S. licensees and LOI filers.

^{80/} Notice, slip op. at 45 ¶ 96.

affiliated in ownership with Inmarsat or ICO have been able to obtain equitable access to spectrum and markets in every country in which ICO and Inmarsat have such access and (2) such a transfer is in the public interest.

H. Orbital Debris Mitigation

The Commission seeks comment on orbital debris mitigation practices, based on draft guidelines developed by the National Aeronautics & Space Administration (“NASA”) and the Department of Defense, and asks whether such practices should be incorporated into the Commission’s rules or into the authorization process for 2 GHz MSS systems. Such requirements for orbital debris mitigation for 2 GHz MSS systems would not become final until the FCC institutes and completes a separate proceeding in which to consider this topic with respect to all Commission-licensed satellite systems. Finally, the Commission tentatively concludes that any such new orbital debris mitigation requirements subsequently adopted should only be applied to systems that have not passed a stage at which such requirements reasonably can be incorporated into the design, construction, or operation of the system.^{81/}

Iridium endorses the Commission’s conclusion that the topic of orbital debris mitigation should be addressed in a separate proceeding covering all satellites – not just 2 GHz systems. Moreover, Iridium concurs that the Commission is the appropriate body to establish and apply the resulting orbital debris mitigation requirements for communications satellites. As the Commission will likely license literally hundreds of satellites as a consequence of the 2 GHz proceeding, and more in other pending

^{81/} *Id.*, slip op. at 46 ¶¶ 99-102.

proceedings, it is incumbent upon the Commission to embark on the orbital debris mitigation proceeding with some haste.

Iridium encourages the Commission to impose some measure of orbital debris mitigation requirements on all 2 GHz applicants, particularly the requirement that systems have the ability to de-orbit every space vehicle at the end of its useful life (including autonomous de-boost in the case of satellite failure due to the end of its design life) with a high degree of reliability. This approach would serve to introduce sound orbital management practices and minimize competitive detrimental impact on 2 GHz systems relative to one another. Moreover, this requirement should apply not only to U.S.-licensees but also to those who seek authorization to operate in the U.S.

I. Exclusionary Arrangements

Iridium supports the Commission's proposal to adopt for 2GHz MSS providers the rule, now applicable to other satellite services, that prohibits exclusionary arrangements. As the Commission proposes, this rule should be applicable to non-U.S.-licensed systems as well as U.S.-licensed systems. As the Commission recognized in the *DISCO II Report and Order*:

The goal of our exclusive arrangement prohibition is to maximize fair and effective competition....To continue to advance these procompetitive objectives, we expect to apply this prohibition to future U.S. licensees. Similarly, we will apply the prohibition to non-U.S. operators as we grant them access to the U.S. market. We will therefore attach a condition to entry into the U.S. market that prohibits a foreign operator from providing any service between the United States and *any country* with which such satellite has an exclusive arrangement.

and

Thus, we will prohibit a non-U.S. satellite operator from providing service between the United States and any

country in which it has entered into an exclusive agreement to provide satellite capacity for a particular service. This approach is consistent with our national treatment and MFN obligations under the GATS because we will be treating non-U.S. satellites the same as U.S. satellites and will treat all non-U.S. satellites similarly."^{82/}

This same rationale applies to the 2GHz MSS operators and service rules. Thus, the prohibition against exclusionary arrangements should be included in the 2 GHz service rules, as well.

Iridium suggests, however, that the scope of the prohibition be clear in the rules and slightly modified from the way it appears currently in Part 25. At present, the rules applicable to Big LEOs, Little LEOs, and the Ka-Band, cited in note 219 of the Notice, are all written as prohibiting the issuance of a license for a space station. For the 2 GHz operators, where three LOI filers are not seeking and will not receive a U.S. license, the rule should reflect the prospective prohibition as discussed in DISCO II and not just be framed as a condition under which a U.S. license will or will not be issued.^{83/}

VI. MOBILE EARTH STATION LICENSING

In its Notice, the Commission has also proposed to license the 2 GHz mobile earth stations in the same manner as it licenses the Big LEO earth stations. This includes issuing a blanket license for the terminals, prohibiting their use on civil aircraft unless directly connected to the aircraft cabin communications system, requiring that user transceiver units obtain authorization from the space segment operator before

^{82/} *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, 12 FCC Rcd 24094, 24165-24166 (1997) (*Report and Order* in IB Docket No. 96111, CC Docket No. 93-23, RM-7931, and File No. ISP-92-007) [*"DISCO II Report and Order"*].

^{83/} In fact, the other rules should be modified to reflect the DISCO II decision and to be framed as a prohibition against future conduct.

commencing communications through space stations, and requiring the holder of a blanket license to assume responsibility for individual units when they are communicating with a satellite system. Iridium generally supports extending these provisions to 2 GHz MSS mobile earth terminals.

Iridium is a signatory to the GMPCS-MoU and submitted comments in IB Docket 99-67 earlier this week, in which Iridium specifically supported the continued use of the blanket license for GMPCS terminals. As Iridium explained in its Comments, Iridium supports the Commission's proposals to have both a certification process (which Iridium believes should be voluntary) and a blanket licensing process for GMPCS terminals. Historically the Commission has used a blanket licensing process rather than a type approval or equipment certification process for mobile satellite terminals. The blanket licensing process that evolved for the Big LEOs incorporated certain technical showings that would have otherwise been included in an equipment certification process. Although the Commission in the Notice of Proposed Rulemaking in IB Docket 99-67 now proposes an equipment certification process for GMPCS terminals, it has proposed to retain the blanket license as well.^{84/} Iridium strongly supports that proposal, with the

^{84/} As the Commission recognized in the NPRM in IB Docket 99-67, the type approval or certification process serves a distinct purpose that is different from the purpose served by the blanket license. The type approval or certification process provides a level of assurance that equipment meets certain essential technical requirements. The license establishes the authority and conditions under which the equipment may be used. This distinction is definitely clear outside the U.S. The U.S. blanket license process for GMPCS has been followed by numerous countries around the world that might have otherwise required individual terminal licenses. It has been Iridium's experience that many countries that had previously required individual terminal licenses (e.g., Japan) found the U.S. concept of a blanket license, by which the terminals were still licensed but to a service provider rather than to the user, an acceptable alternative and adopted the blanket license procedure for GMPCS, changing their own laws, rules, and/or policies to follow the U.S. Big LEO rules. For the
(continued...)

understanding that the process may be streamlined so that there is minimal duplication of information required in both processes.

Iridium also generally supports the Commission's proposals to license terminals for at least 10 years or longer, if the Commission adopts a longer space segment term, and to treat requests for additional units as minor license modifications, as is the case with the Big LEOs. Finally, Iridium supports the application of current radiation hazard standards to 2 GHz MSS terminals.

VII. INTERNATIONAL ISSUES

The Commission's Notice appropriately raises the issue that will most likely determine whether the Commission's efforts in this proceeding facilitate a genuinely competitive global market for 2 GHz MSS services. However, although the Commission appears to acknowledge the problem,^{85/} it has not identified any steps that it is prepared to take to address the significant problem of access to European 2 GHz MSS spectrum (and global MSS spectrum generally) that stems from the inconsistencies in global MSS spectrum allocations and the scarcity of global MSS uplink spectrum.

As Iridium has previously stated, the spectrum requirements of the applicants in this proceeding (including those entities that have filed LOIs) must be viewed from a global perspective. In ET Docket No. 95-18, the Commission allocated the 1990 to 2025 MHz band for Earth-to-space MSS use (the "uplink band"), and the 2165 to 2200

^{84/} (...continued)

U.S. to drop this process now would send a confusing message to the rest of the world.

^{85/} See Notice, slip op. at 49-50 ¶ 111.

MHz band for space-to-Earth MSS use (the "downlink band").^{86/} The U.S. domestic MSS spectrum allocation (the "Region 2 MSS allocation") differs from the worldwide MSS band plan adopted at WARC-92.^{87/} The worldwide allocation provides a different set of frequencies for MSS uplinks, from 1980 to 2010 MHz. The inconsistency between the Region 2 MSS allocation and the worldwide MSS allocation results in only 20 MHz in the domestic uplink band, from 1990 to 2010 MHz, coinciding with the worldwide allocation. As a practical matter, the frequencies between 1990 to 2010 MHz are the only uplink frequencies available to MSS system applicants and non-U.S.-licensed system proponents for global use. If competition in this service is to be realized, more spectrum must be made available and this can only be achieved by global agreement.

Moreover, the pan-European spectrum-use agreements (the "European 2 GHz Band Plan") adopted in 1997^{88/} also contribute additional complexity to the global MSS spectrum landscape. Under the European 2 GHz Band Plan, the European spectrum is divided in half. Access to one half of the European MSS spectrum available -- the 1980 to 1995 MHz and the 2170 to 2185 MHz bands -- essentially is frozen until at least the

^{86/} See 2 GHz MSS Allocation Order, 12 FCC Rcd 7388 (1997).

^{87/} *Id.* at Appendix A.

^{88/} See Conference of European Postal and Telecommunications Administrations: European Radiocommunications Committee Decision on the Harmonized Use of Spectrum for Satellite Personal Communication Services (S-PCS) operating within the bands 1610-1626.54 MHz, 2483.5-2500 MHz, 1980-2010 MHz, and 2170-2200 MHz, ERC/DEC/(97/03) ("CEPT: ERC Decision"); see also European Radiocommunications Committee Decision on Transitional Arrangements for the Fixed Service and the MSS in the Bands 1980-2010 MHz and 2170-2200 MHz in Order to Facilitate the Harmonized Introduction and Development of S-PCS in the 2 GHz Allocation to MSS (1996).

year 2005,^{89/} while the other half is available only to "systems that are likely to offer services within the CEPT before the beginning of the year 2001."^{90/}

The consequence of the European 2 GHz Band Plan is that only two entities, Inmarsat and ICO, currently have assurance of access to 2 GHz MSS spectrum in Europe until at least 2005. Thus, the European 2 GHz Band Plan currently does not include any of the applicants that are seeking U.S. space segment licenses^{91/} for global MSS systems in this processing round, which may be operational after 2001 but before 2005. The inconsistency between the domestic MSS allocation and the global MSS allocation thus constrains the Commission's ability to authorize multiple 2 GHz MSS systems that can operate on a global basis.

All NGSO MSS licensees with U.S. space segment authority must have the opportunity to access the 2 GHz spectrum in Europe before 2005.^{92/} Separately, a solution to the inconsistency in the domestic and global allocations must be found. A failure by the Commission to resolve these problems will preclude the authorization of

^{89/} *CEPT: ERC Decision, supra*, at Annex 1; Table 1, Note 2, referencing the 1996 ERC decision on transitional arrangements for Fixed Service migration by 1 January 2005.

^{90/} *CEPT: ERC Decision* at 3.

^{91/} No potential applicant for a space segment license from the U.S. could have been assured that it could meet the 2001 requirement imposed in the CEPT proceeding, as the U.S. had not even opened a filing window for a processing round in the 2 GHz band by the deadline for submissions in the CEPT proceeding and the Commission had not proposed or adopted service rules.

^{92/} To achieve this result, either the current European allocations for Inmarsat's Horizon system, or ICO's system, or both, must be modified to make room for additional entrants. Otherwise, accelerated band clearing by European fixed-services in the 1980-1995 MHz and 2170-2185 MHz bands would be required. However, this latter approach would not be a complete solution in light of the inconsistency between the U.S. domestic and global MSS band plans.

multiple global MSS systems in the 2 GHz band to the detriment of competition and will compromise the public interest. The Commission has previously recognized that the public interest requires that an MSS license carry with it some reasonable expectation that it will permit the holder to implement its system.^{93/} Until these problems are resolved, U.S. 2 GHz MSS licensees will suffer severe constraints on their global operations that might threaten the commercial viability of their proposed MSS systems. Accordingly, as it has in the past,^{94/} Iridium again urges the Commission to initiate a formal process with the EC, CEPT, and other appropriate authorities to ensure that all MSS providers have equitable access to spectrum and to consider in such process other un-used or underutilized MSS spectrum in the Lower L-Band that should be made available through such a process.

The U.S. must work with Europe and other countries to ensure that U.S. global MSS systems will not be frozen out of the 2 GHz band. This activity must include obtaining a commitment from CEPT to adopt procedures that ensure U.S. 2 GHz MSS licensees will have access to appropriate spectrum in the CEPT countries after 2001, or before 2005. The U.S. must also work with countries outside Europe to see that a U.S. band plan is accepted around the world.

VIII. INTERSERVICE SHARING

The Commission proposes to address any remaining issues with respect to interservice sharing between incumbent operators that now occupy the portions of 2 GHz band now allocated for use by MSS and the satellite service providers that will

^{93/} *L-Band NPRM*, 11 FCC Rcd 11675, 11681 ¶ 14.

^{94/} See Iridium Consolidated Comments, *supra* note 18, at 4-6; Consolidated Reply of Iridium LLC, filed June 18, 1998, in connection with File Nos. 179-SAT-P/LA-97(16), *et al.*, at 3-5 ["Iridium Reply Comments"].

soon enter that spectrum, within the context of ET Docket No. 95-18.^{95/} Iridium agrees with that approach.

Iridium is on record in support of the position that all incumbents now occupying the 2 GHz MSS bands (including Fixed Service ("FS") and Broadcast Auxiliary Service ("BAS") operators) should be relocated prior to commencement of operations of 2 GHz MSS in the United States.^{96/} Such an approach would clearly simplify implementation of licensed MSS systems and afford needed certainty to incumbents and MSS operators alike. By contrast, further delay in undertaking such relocation (*i.e.*, by adopting some sort of phased transition) would only result in more costly and disruptive processes having to be implemented at some future date.

However, as discussed previously in these comments, in formulating a relocation scheme, just as in adopting a processing and band plan framework, the Commission must be mindful to remain competitively neutral. The Commission should not adopt procedures that permit only one MSS operator total control of the optimum coordination and sharing arrangements, even if that operator is the only one operating in the band for some time. The Commission must take care to ensure that one licensee is not empowered to block entry for all others or to raise the stakes for subsequent entry in a non-competitive, predatory fashion. Basic fairness, free-trade principles, Commission rules and legal precedent all argue in favor of adoption of a licensing arrangement and

^{95/} Notice, slip op. at 50 ¶¶ 112-13; see also *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, ET Docket No. 95-18.

^{96/} See Comments of Iridium LLC in ET Docket No. 95-18, filed February 3, 1999, at 2 (comments on *Third Notice of Proposed Rulemaking*).

sharing criteria that treat all applicants in an equitable manner and foster competition in the provision of telecommunication services.

With respect to out-of-band and spurious emissions, Iridium supports the Commission's proposal to apply the domestic emission limits in Section 25.202(f) to all 2 GHz systems operating in the U.S.^{97/} Iridium further supports the out-of-band emissions limits for 2 GHz MSS as terminals proposed in the new Section 25.216(a)(5), as this would be consistent with ITU-R Recommendation M.1343 (Essential Technical Requirements of Mobile Earth Stations for Global Non-Geostationary Mobile-Satellite Service Systems in the Bands 1-3 GHz), and should be adequate to protect users in adjacent bands.

However, it is unclear whether the Commission also proposes here new provisions within Section 25.216 to set limits, including interim limits, on out-of-band emissions for terminals operating in the 1610-1660.5 MHz band, a proposal that is the subject of the pending GMPCS proceeding. For the reasons explained in the comments recently filed by Motorola, Inc., in that proceeding and supported by Iridium, Iridium opposes the adoption of any interim standards on emissions limits for MSS terminals. There is no rational policy or technical basis for allowing MSS terminals transmitting in these frequency ranges to be incapable of complying with the final emissions limits immediately upon commencement of service. Moreover, a transitional standard is ill-advised as it is likely to produce dislocations for carriers, confusion in the

^{97/} Notice, slip op. at 50-51 ¶ 114.

marketplace, and risk, creating an operating environment that is contaminated by terminals unlikely to be retrofitted or replaced.^{98/}

IX. CONCLUSION

As the foregoing demonstrates, the Commission can and should avoid mutual exclusivity among the applicants in this proceeding. Engineering solutions exist that would enable the Commission to assign spectrum to all of the pending applicants in the 2 GHz MSS band. Moreover, it is clear that, of the Commission's four alternative band assignment proposals, the Traditional Band Plan would best serve the public interest. However, it is equally clear that the U.S. band assignment framework and licensing scheme for 2 GHz MSS systems will not alone ensure the healthy emergence of robust competition. Rather, the Commission must also work with European authorities and other countries to ensure that U.S. global MSS systems will not be frozen out of the 2 GHz band outside the U.S. and to ensure that all MSS systems have equitable access to spectrum.

^{98/} Comments of Motorola, Inc., in IB Docket No. 99-67, filed June 21, 1999, at 12-13; Comments of Iridium LLC, in IB Docket No. 99-67, filed June 21, 1999, at 12.

For the foregoing reasons, Iridium respectfully urges the Commission to adopt the Traditional Band Plan and service rules for licensing 2 GHz MSS systems consistent with the views expressed herein.

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